

1. As of entry of the response to Notice of Appeal and Pre-Brief conference request filed on 09/13/2007 and Pre-Brief Appeal Conference decision to reopen Prosecution on 05/28/2008, claims 1-27 are pending in this application. The claims 1-5, 7-14, 16-23 and 25-27 are allowed by Examiner's amendment below.

### **Examiner's Amendment**

2. An examiner's amendment to the record appears below. Should the changes and/or additions be unacceptable to applicant, an amendment may be filed as provided by 37 CFR 1.3.12. To ensure consideration of such an amendment, it MUST be submitted no later than the payment of the issue fee.

3. The following claim has been amended upon agreement by applicant during a telephone conversation with Mr. Howard L. Speight on July 30, 2008.

The following is set amendment of claims that this set of claims will be replaced with the original claims 1-27.

Cancellation claims 6,15 and 24.

1. (currently amended) A method ~~for transforming multiple alternative equality conditions between a database column and a set of values in a query~~ comprising the steps of:

identifying multiple alternative equality conditions between a database column and a set of values in a query;

identifying ~~one or more~~ a group[[s]] of consecutive values in the set;

removing equality conditions corresponding to the values in ~~one or more of~~ the identified group[[s]]; ~~and~~

~~adding one or more inequality conditions corresponding to the one or more of the identified groups.~~

removing the values in the identified group from the set;

adding a range of values corresponding to the values in the identified group to the set;

adding an inequality condition between the database column and the least member of the range of values; and

adding an inequality condition between the database column and the greatest member of the range of values.

2. (original) The method of claim 1 further comprising the step of:  
checking whether the database column is a non-indexed column.
3. (original) The method of claim 1 further comprising the step of:  
checking whether the set of values includes only literal discrete values.
4. (original) The method of claim 1 further comprising the step of:  
checking whether the set contains more values than a specified lower limit.
5. (currently amended) The method of claim 1 where identifying ~~one or more the~~ group[[s]] of consecutive values in the set comprises identifying ~~the non-overlapping a~~ group[[s]] with the largest numbers of consecutive values.
6. (cancelled)
7. (currently amended) The method of claim 1 where removing equality conditions corresponding to the values in the ~~one or more of~~ the identified group[[s]] comprises creating a group of equality conditions that does not include equality conditions corresponding to those values.
8. (currently amended) The method of claim 1 where ~~adding one or more inequality conditions corresponding to the one or more of the identified groups comprises, for each group:~~  
adding a greater than or equal to the inequality condition between the database column and the least member of the ~~group~~ range of values is a greater than or equal to condition; and  
adding a less than or equal to the inequality condition between the database column and the greatest member of the ~~group~~ range of values is a less than or equal to condition.

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9. **(currently amended)** The method of claim 1 where identifying ~~one or more the~~ group[[s]] of consecutive values in the set comprises identifying ~~one or more a~~ group[[s]] of at least three consecutive values in the set.

10. **(currently amended)** A computer program, stored on a tangible storage ~~medium, for executing database queries that include multiple alternative equality conditions between a database column and a set of values,~~ the program comprising executable instructions that cause a computer to:

identify multiple alternative equality conditions between a database column and a set of values in a query;

identify ~~one or more a~~ group[[s]] of consecutive values in the set;

remove equality conditions corresponding to the values in ~~one or more of~~ the identified group[[s]]; **and**

~~add one or more inequality conditions corresponding to the one or more of the identified groups.~~

remove the values in the identified group from the set;

add a range of values corresponding to the values in the identified group to the set;

add an inequality condition between the database column and the least member of the range of values; and

add an inequality condition between the database column and the greatest member of the range of values.

11. (original) The computer program of claim 10 further comprising executable instructions that cause the computer to:

check whether the database column is a non-indexed column.

12. (original) The computer program of claim 10 further comprising executable instructions that cause the computer to:

check whether the set of values includes only literal discrete values.

13. (original) The computer program of claim 10 further comprising executable instructions that cause the computer to:

check whether the set contains more values than a specified lower limit.

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14. **(currently amended)** The computer program of claim 10 where the computer identifies ~~one or more~~ the group[[s]] of consecutive values in the set by identifying ~~the non-overlapping~~ a group[[s]] with the largest numbers of consecutive values.

15. **(cancelled)**

16. **(currently amended)** The computer program of claim 10 where the computer removes equality conditions corresponding to the values in the ~~one or more of~~ the identified group[[s]] by creating a group of equality conditions that does not include equality conditions corresponding to those values.

17. **(currently amended)** The computer program of claim 10 where ~~the computer adds one or more inequality conditions corresponding to the one or more of the identified groups by, for each group:~~

~~adding a greater than or equal to the inequality~~ condition between the database column and the least member of the ~~group range of values is a greater than or equal to condition;~~ and

~~adding a less than or equal to the inequality~~ condition between the database column and the least member of the ~~group range of values is a greater than or equal to condition.~~

18. **(currently amended)** The computer program of claim 10 where the computer identifies ~~one or more~~ the group[[s]] of consecutive values in the set by identifying ~~one or more~~ a group[[s]] of at least three consecutive values in the set.

19. **(currently amended)** A database system ~~for executing database queries having multiple alternative equality conditions between a database column and a set of values,~~ comprising:

one or more nodes;

a plurality of CPUs, each of the one or more nodes providing access to one or more CPUs;

a plurality of virtual processes, each of the one or more CPUs providing access to one or more virtual processes;

each virtual process configured to manage data, including rows organized in tables, stored in one of a plurality of data-storage facilities; and

an optimizer configured to:

identify multiple alternative equality conditions between a database column and a set of values in a query;

identify ~~one or more~~ a group[[s]] of consecutive values in the set;

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remove equality conditions corresponding to the values in ~~one or more of~~ the identified group[s]; **and**

~~add one or more inequality conditions corresponding to the one or more of the identified groups.~~

remove the values in the identified group from the set;

add a range of values corresponding to the values in the identified group to the set;

add an inequality condition between the database column and the least member of the range of values; and

add an inequality condition between the database column and the greatest member of the range of values.

20. (original) The database system of claim 19 where the optimizer is further configured to check whether the database column is a non-indexed column.
21. (original) The database system of claim 19 where the optimizer is further configured to check whether the set of values includes only literal discrete values.
22. (original) The database system of claim 19 where the optimizer is further configured to check whether the set contains more values than a specified lower limit.
23. **(currently amended)** The database system of claim 19 where the optimizer identifies ~~one or more~~ the group[s] of consecutive values in the set by identifying ~~the non-overlapping a~~ group[s] with the largest numbers of consecutive values.
24. **(cancelled)**
25. **(currently amended)** The database system of claim 19 where the optimizer removes equality conditions corresponding to the values in the ~~one or more of~~ the identified group[s] by creating a group of equality conditions that does not include equality conditions corresponding to those values.
26. **(currently amended)** The database system of claim 19 where ~~the optimizer adds one or more inequality conditions corresponding to the one or more of the identified groups by, for each group:~~

~~adding a greater than or equal to the inequality~~ condition between the database column and the least member of the ~~group range of values is a greater than or equal to condition~~; and

~~adding a less than or equal to the inequality~~ condition between the database column and the least member of the ~~group range of values is a greater than or equal to condition~~.

27. (currently amended) The database system of claim 19 where the optimizer identifies ~~one or more the~~ group[[s]] of consecutive values in the set by identifying ~~one or more a~~ group[[s]] of at least three consecutive values in the set.

### Reasons for Allowance

4. Claims 1-5, 7-14, 16-23 and 25-27 are allowed

The following is an examiner's statement of reason for allowance:

With respect to claims **1, 10 and 19**, none of the references of record teaches or suggests the claimed a method, and a database system, comprising, along with all the other claimed feature, identifying a group of consecutive values in the set, **removing equality conditions** corresponding to the values in the identified group, **removing the values** in the identifier group from the set, **adding a range of values** of corresponding to the values in the identified group to the set, **adding an inequality condition** between the database column and the least number of the range of values, and **adding the an inequality condition** between the database column and greatest member of the range values.

**Claims 2-5, 7-9, 11-14, 16-18, 20-23, and 25-27** are allowable by virtue of their dependencies on claims 1, 10 and 19.

Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance".

### **Conclusion**

5. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Hung VY whose telephone number is (571) 272-1954. The examiner can normally be reached on Monday-Friday 8:30 am - 5:30pm. If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, DON WONG can be reached on (571) 272-1834. The fax numbers for the organization where this application or proceeding is assigned are (703) 872-9306 for regular communications and (703) 308-7722 for After Final communications.

Information regarding the status of an application may be obtained from the patent Application Information Retrieval (PAIR) system. Status information for published application may be obtained from either private Pair or Public Pair. Status information for unpublished applications is available through Private Pair only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have question on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

/Hung T Vy/  
Primary Examiner, Art Unit 2163  
July 30, 2008

